

REMARKS

Claims 21-25 are withdrawn. Claim 1 is amended to improve readability. No new subject matter is added, as all amendments are supported by the original application at, e.g., claim 1. Reconsideration and allowance of claims 1-20 is respectfully requested in light of the following remarks.

Claim Rejections – 35 U.S.C. § 102

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,245,669 to Fu et al. ("Fu"). The applicant disagrees.

Claim 1 recites depositing a multi-layered hard mask on the wire line layer, the multi-layered hard mask including a first hard mask, a second hard mask, and a third hard mask.

It is alleged that Fu discloses a first hard mask (16; FIG. 4), a second hard mask (18; FIG. 4), and a third hard mask (21; FIG. 4).

To the contrary, while Fu describes layer 16 as a "bottom hard mask" (column 8, lines 63-64) and layer 18 as a "silicon oxynitride hard mask" (column 8, line 64), layer 21 is not a hard mask at all but a photoresist layer 21 used to pattern the hard mask layer 16, 18 (column 10, lines 22-23).

Consequently, Fu does not anticipate claim 1 because it fails to show the identical invention in as complete detail as is contained in the claim. MPEP 2131, *citing Richardson v. Suzuki Motor Company*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

Claim 3 depends from claim 1 and inherently contains the features of claim 1. Consequently, Fu fails to anticipate claim 3 for at least the same reason that it fails to anticipate claim 1.

Claim 4 recites forming a multi-layered hard mask, the multi-layered hard mask including a first hard mask, a second hard mask, and a third hard mask. This feature is substantially similar to the feature found in claim 1 that was discussed above. That is, Fu fails to teach the feature of a multi-layered hard mask that includes a first, second, and third hard mask.

Consequently, Fu fails to anticipate claim 4 because it does not show the identical invention in as complete detail as contained in the claim. MPEP 2131, *citing Richardson v. Suzuki Motor Company*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

Claim 5 depends from claim 4 and inherently contains the features of claim 4. Consequently, Fu fails to anticipate claim 5 for at least the same reason that it fails to anticipate claim 4.

Claims 1 and 3-4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,534,389 to Ference et al. ("Ference"). The applicant disagrees.

Claim 1 recites depositing a multi-layered hard mask on the wire line layer, the multi-layered hard mask including a first hard mask, a second hard mask, and a third hard mask. Claim 1 further recites patterning the wire line layer using the multi-layered hard mask.

It is alleged that Ference discloses a wire line layer (14; FIG. 1) as well as first, second, and third hardmasks (16, 18, 20; FIG. 1).

Ference additionally discloses that when the alleged wire line layer 14 is etched to form gate stacks 22, 24, a "polysilicon conductor (PC) photoresist mask (*not shown*) and corresponding etching steps" are used (FIG. 3; column 4, lines 54-54; emphasis added).

Thus, Ference does not teach patterning the alleged wire line layer 14 using the alleged multi-layered hard mask 16, 18, 20. Rather, Ference teaches that the alleged wire line layer 14 is patterned with a PC photoresist mask, the structure of which is unknown as Ference does not illustrate it.

Consequently, Ference fails to anticipate claim 1 because it does not teach the identical invention in as complete detail as is contained in the claim. MPEP 2131, *citing Richardson v. Suzuki Motor Company*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

Claim 3 depends from claim 1 and inherently contains the features of claim 1. Consequently, Ference fails to anticipate claim 3 for at least the same reason that it fails to anticipate claim 1.

Claim 4 recites forming a multi-layered hard mask, the multi-layered hard mask including a first hard mask, a second hard mask, and a third hard mask. Claim 4 also recites forming wire lines by patterning the wire line layer using the multi-layered hard mask. This feature is substantially similar to the feature found in claim 1 that was discussed above. That is, Ference fails to teach the feature of patterning the alleged wire line layer 14 using the alleged multi-layered hard mask 16, 18, 20.

Consequently, Ference fails to anticipate claim 4 because it does not show the identical invention in as complete detail as is contained in the claim.

Claim Rejections – 35 U.S.C. § 103

Claims 2 and 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ference. The applicant disagrees.

Claim 2 depends from claim 1. Ference does not establish a *prima facie* case of obviousness for claim 1 because, as explained above, Ference fails to teach or suggest the

feature of patterning the alleged wire line layer 14 with the alleged hard mask layer 16, 18, 20. MPEP 2143.03.

Consequently, Ference also fails to establish *prima facie* obviousness for claim 2 because any claim that depends from a nonobvious independent claim is also nonobvious. MPEP 2143.03, *citing In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Independent claim 6 recites forming a multi-layered hard mask on the bit line layer, the multi-layered hard mask including at least a first hard mask, a second hard mask, and a third hard mask. Claim 6 also recites patterning the bit line layer using the third hard mask as an etch mask to form bit lines.

It has been alleged that it would be obvious to replace Ference's layer (14; FIG. 1) with a bit line layer as recited in claim 6. It is further alleged that Ference teaches first, second, and third hardmasks (16, 18, 20; FIG. 1).

However, as explained above with regard to the § 102 rejection of claim 1, Ference does not teach patterning the alleged bit line layer 14 using any of the alleged hard mask layers 16, 18, 20. Instead, Ference explicitly states that a "polysilicon conductor (PC) photoresist mask (*not shown*) and corresponding etching steps" are used (FIG. 3; column 4, lines 54-54; emphasis added).

Consequently, Ference fails to establish *prima facie* obviousness for claim 6 because it fails to teach or suggest every feature recited in the claim. MPEP 2143.03.


Claims 7-20 depend from claim 6. Consequently, Ference also fails to establish *prima facie* obviousness for claims 7-20 because any claim that depends from a nonobvious independent claim is also nonobvious. MPEP 2143.03, *citing In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1-20 is requested. Please telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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